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Janet Campbell, Editor

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GENERAL NEWS

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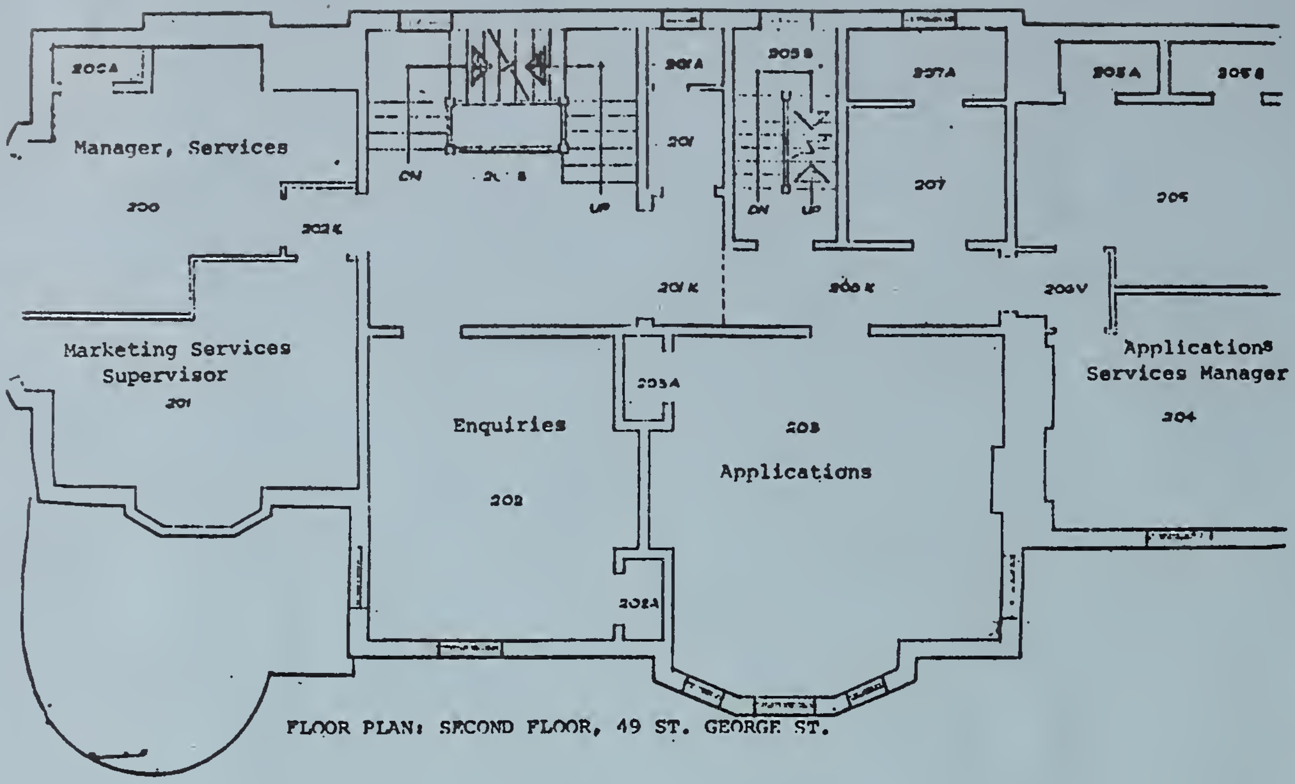
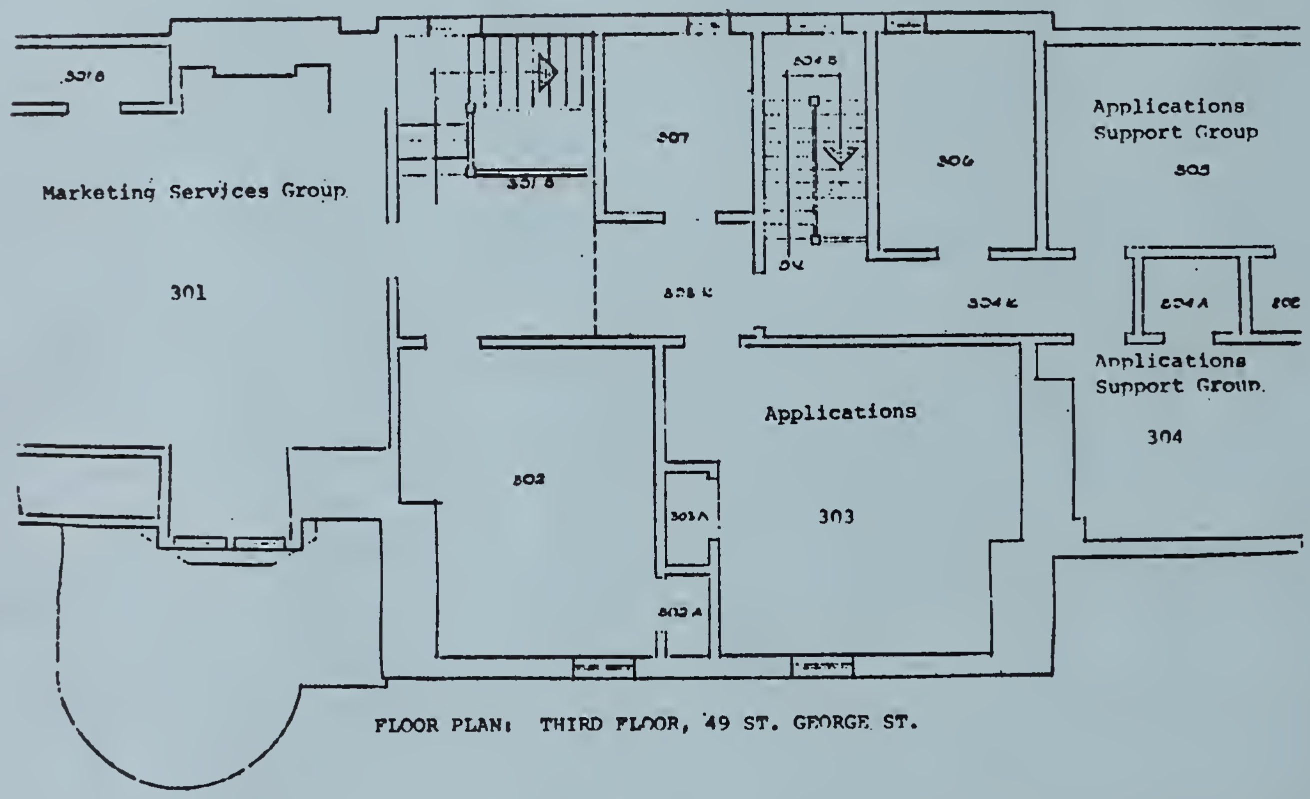


FLOOR PLAN: SECOND FLOOR, 49 ST. GEORGE ST.



FLOOR PLAN: THIRD FLOOR, 49 ST. GEORGE ST.

COMPUTERNEWS is a monthly publication produced by the University of Toronto Computer Centre. Enquiries or contributions should be directed to the Editor, Janet Campbell or the Assistant Editors, Margo Harvie and Ruth Borenstein in the Sandford Fleming Building room SF125 or (416)-928-2066. Layout and ATS typing are provided by Lynne Jenkins. Subscription changes should be directed to the Information Office, Sandford Fleming Building room SF128 or (416)-928-4990.

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COMPUTERNEWS QUESTIONNAIRE

Many subscribers have already completed and returned the questionnaire included in last month's issue of COMPUTERNEWS. Comments and criticisms compiled from these questionnaires will assist the UTCC Publications Group in future revisions to the current layout and content of COMPUTERNEWS. Subscribers who have not yet completed the questionnaire are asked to do so as soon as possible. If you require a copy of the questionnaire, please contact the Publications Group at 928-4034.

Janet Campbell

NEW COMPUTING CO-ORDINATOR

UTCC is pleased to announce the appointment of Mr. Clement Di Placido as Computing Co-ordinator for the New Physics Terminal in the Burton Tower.

A recent graduate in Computer Science at the University of Toronto, Clem has gained working experience as an advisor/operator on the Remcom terminal at Erindale College.

Clem can be contacted in room 1202 of the Burton Tower, 928-8823.

Stan Yagi

NEW KEYPUNCHING CHARGES

Effective August 1, 1975, keypunching charges were increased from $5 to $10 per hour. As before, these charges can be applied against a Customer Account Number, and all arrangements must be made through the Computing Co-ordinator.

Joyce Walton

NEW FORMS

As announced in the April issue of COMPUTERNEWS, the Sandford Fleming Terminal introduced a smaller format of printer paper and a smaller type face as the default standard form on August 1, 1975. The new standard form is 8 1/2" deep by 15" wide (21.6 cm x 38.1 cm) with an 8 line per inch carriage control tape and a smaller PN print train. All jobs routed to this terminal are now printed on this form by default.

Two new forms numbers have been added - 30 (8 1/2" x 15" lined) and 31 (8 1/2" x 15" reversed). A table summarizing the available forms is posted at all terminals.

Mark Tapia

PERSONNEL CHANGES

Leaving the Centre this month is Robert Price of Operations. Best wishes in your future endeavours.

July brings us three new employees. Wynona Stanley is a clerk in Administration, Reiner Paessler is an ancillary machine operator in the Applications Support area and Helen Kan is a keypunch operator in the Applications Support area.

I hope you all enjoy working with us.

Trudy Holland

RECENT ACQUISITIONS IN THE DEPARTMENT OF COMPUTER SCIENCE LIBRARY

Design Automation Workshop
Proceedings. 11 (1974).

Freeman, Peter.
Software Systems Principles: A Survey.
Chicago, Science Research Assoc., 1975.

Griswold, Ralph E.
String and List Processing in SNOBOL4: Techniques and Applications.
Englewood Cliffs, N.J., Prentice-Hall, 1975.

IFIP Working Conference on Principles of Computer-Aided Design, Eindhoven, 1972.
Computer-aided Design, ed. by J. Vlietstra and Wielinga, R.F.
Amsterdam, North-Holland, 1973.

International Conference on Reliable Software, Los Angeles, 1975.
Proceedings.

Nanus, Burt,; Wooton, L.M. and Borko, H.
The Social Implications of the Use of Computers Across National Boundaries.
Montvale, N.J., AFIPS, 1973.

Norman, Donald A. and Rumelhart, D.E.
Explorations in Cognition.
San Francisco, W.H. Freeman, 1975.

Peterson, William W.
Introduction to Programming Languages.
Englewood Cliffs, N.J., Prentice-Hall, 1974.

Schur, Lee David.
Time-shared Computer Languages: An Introduction to Conversational Computing.
Reading, Mass., Addison-Wesley, 1973.

Spencer, Donald D.
Computer Acronym Handbook.
Englewood Cliffs, N.J., Prentice-Hall, 1974.

Van Tassel, Dennie.
Program Style, Design, Efficiency, Debugging, and Testing.
Englewood Cliffs, N.J., Prentice-Hall, 1974.

Weitzman, Cay.
Minicomputer Systems: Structure, Implementation and Application.
Englewood Cliffs, N.J., Prentice-Hall, 1974.

Winston, Patrick Henry, ed.
The Psychology of Computer Vision.
New York, McGraw-Hill, 1975.

HOURS OF SERVICE - AUGUST 1ST WEEKEND

The following hours of service will be in effect during the August 1st Weekend for:

S/370-165-II USERS

	AUGUST 1 (FRIDAY)	AUGUST 2 (SATURDAY)	AUGUST 3 (SUNDAY)	AUGUST 4 (MONDAY)
SF112	regular hrs	10am-6pm	10am-6pm	closed
EUT	regular hrs	10am-6pm	10am-6pm	closed
ASUT	regular hrs	10am-6pm	10am-6pm	closed
AST	regular hrs	10am-6pm	10am-6pm	closed

S/360-65 USERS

regular hrs	9am-5pm	9am-5pm	unattended

CRF USERS

regular hrs	closed	closed	closed

Regular hours of service for all systems will resume Tuesday, August 5, 1975.

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HINTS FROM THE ADVISOR

Users specifying multiple copies on the job card (MVT) should be aware that the lines estimate on the job card reflects the total number of lines the user expects the job to print, not the number of lines in each copy. At the time HASP passes the job to OS, HASP divides the line estimate by the number of copies the user wishes, and tells OS to cancel the job when that reduced number of lines have been generated. Then, when the job prints, HASP prints multiple copies of the partial output. An example may clarify the problem slightly. Assume a user runs a job with the following job card:

```
WHITE JOB CARD
// 1234,ABCD,,50,,,5),'joe.user'
```

If the job prints under 1000 lines (including JCL), there is no problem. If the job prints over 1000 lines, it will be cut off at about 1000 lines, and the user will get 5 copies of the fractured output - probably not what was wanted.

....

Another suggestion arises out of the above discussion. Most users who want multiple copies or special forms, indicate this in the appropriate fields of the job card. This is wasteful of resources, since it causes the whole output from the job, including any JCL, program listings, etc., to be specially printed or copied. An alternative is to ask for special treatment of only the output which needs it. The statement(s) which direct output to the printer look something like:

```
//SYSPRINT DD SYSOUT=A
     or
//FT06F001 DD SYSOUT=A
```

The important part is SYSOUT=A, which means direct the output to the printer. There are, in fact, three parameters in the SYSOUT field; the other two are usually defaulted. The full form of the field is:

```
SYSOUT=(output_class,
  number_of_copies,type_of_forms)
```

where:

output_class is A for printer, B for punch

number_of_copies is similar to the copies parameter on the job card, except it only applies to this one output

type_of_forms is the same forms type as on the job card (valid for printed output only)

For example, if a user wants 5 copies of the output from his FORTRAN program, including the statement

```
//GO.FT06F001 DD SYSOUT=(A,5)
```

in his deck in the appropriate place will do the trick. Similarly, if he wants 3 copies of the pli compile output on special forms 2001, coding

```
//PLI.SYSPRINT DD SYSOUT=(A,3,2001)
```

will be effective.

Michael Wagner

SPEAKEASY SESSIONS - GRAPHEASY NOW AVAILABLE

Several improvements have been made to SPEAKEASY since the last SPEAKEASY article in COMPUTERNEWS. Most notable of these are the installation of GRAPHEASY for CALCOMP and GOULD (GRAPHEASY has been available on TEKTRONIX terminals for some time) and the availability of SPEAKEASY in batch.

The following is reprinted from a paper entitled 'GRAPHEASY - A Graphical Extension to SPEAKEASY' by Dr. S. Cohen of Argonne National Laboratory.

"Speakeasy is a general purpose extensible language designed to provide a truly user-oriented interface to information stored in a computer complex. When operating in an interactive time-sharing environment such as TSO, Speakeasy acts as a real-time interface to large libraries of algorithmic routines. Straightforward graphical facilities combined with the existing large information base of mathematical operations enables even a novice user to quickly tailor the processor into a powerful tool for carrying out his calculations.

The statements

```
X = GRID(0, 10, .01)
Y = SIN(X)
Z = DERIVATIVE(Y:X)
6vscale = -1, 1; HSCALE = 0, 10
GRAPH(Y,Z:X)
```

are a <u>complete</u> Speakeasy specification for drawing 2 curves representing the SINE and COSINE for a grid of points starting at 0 and going to 10 in steps of .01."

The paper goes on to explore the advantages of a generalized user interface.

"Each piece of hardware is usually supplied with a set of driving programs that are capable of fully exploiting the capabilities of the device. In the most common approach to interactive graphics, each user of a graphics terminal is supplied with this basic information and proceeds to design an interactive system that meets his own needs. While this approach indeed provides the user with great flexibility, it obviously does so by forcing him to become the designer of the complete system. It requires that he become familiar in great detail with components of the system. For the casual computer user, or even for highly-trained specialists in many fields, this is not a satisfactory solution. Even the flexibility inherent in this approach suffers in that a user may not, while actually using the system, suddenly decide to make use of even a trivial extension. It is generally necessary to reconstitute the system with the new feature added."

The problems addressed in this paper and in GRAPHEASY itself, are familiar to users who have had to write a graphics routine, using calls to PLOT, AXIS, SCALE, etc. (as described in USERBOOK 3.8) only to have to rewrite the routine later when the requirements changed slightly.

GRAPHEASY is an alternative. A subset of SPEAKEASY, it permits the user to take advantage of the plotting capabilities of the CALCOMP and GOULD plotters installed at UTCC, without having

SPEAKEASY SESSIONS Cont'd.

to learn how to program for them. The SPEAKEASY language itself can be learned in a few short sessions. It has a large vocabulary, including operations from physics, calculus and the social sciences.

To produce simple plots one need only learn one new word: GRAPH. In addition, the plotting package must be initialized (see examples below). The output from the example above and several other examples is shown below. To obtain more information on GRAPHEASY, one may run the following job (Class A or under TSO).

```
// EXEC   SPEAKEZ    or SPEAKEZ
help
help  graphics
help  calcwords
help  gouldwords
help graph
```

The TUTORIAL feature, most useful under TSO, may be printed by the following input to SPEAKEZ:

```
TUTORIAL xxx:more:more:more:more...
```

where xxx is one of CALCOMP, GOULD, TEK or TEKTRON (the latter two refer to the 'old Tektronix' and the 'new Tektronix' packages).

The full HELP file may be printed in batch by running the following Class A job:

```
// EXEC  SPEKHELP
```

To get a lower-and-upper-case printout on 8 1/2 x 11 inch paper, code 2009 as the forms parameter on the JOB Statement.

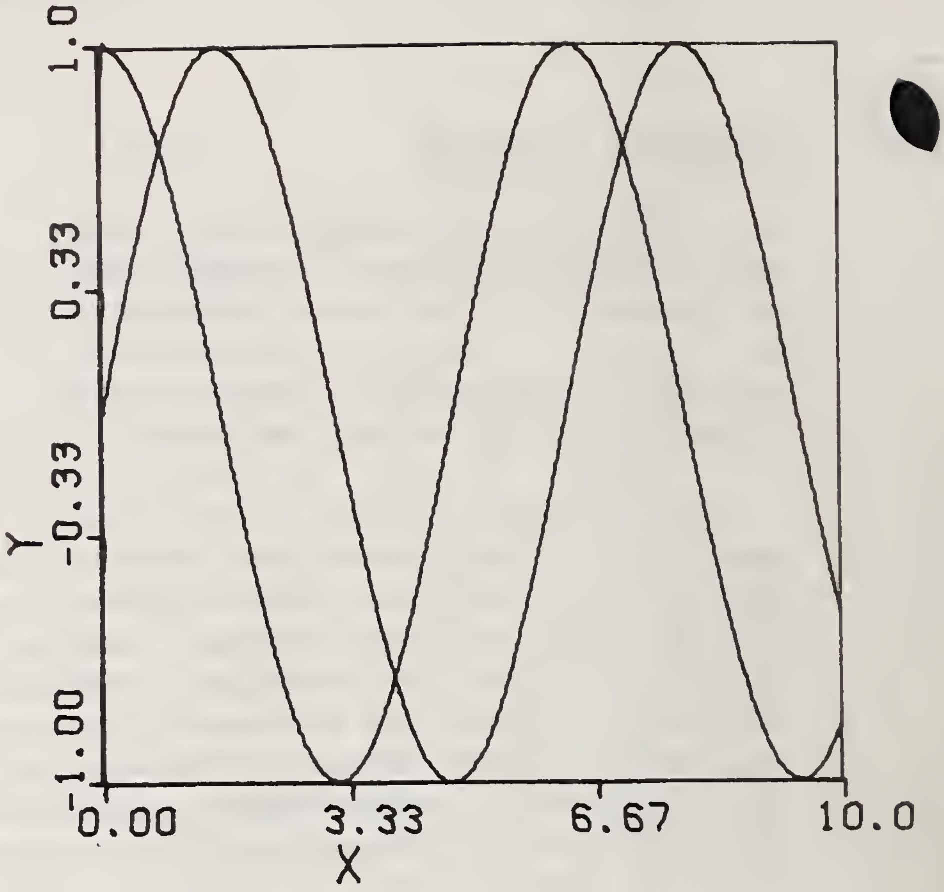
Detailed information on SPEAKEASY will soon be available as part of USERBOOK. The module 3.3SPEAKEASY describes the basic language, how to use it, and gives some examples. The module 3.3SPEAKEASY.INTER describes methods of interfacing SPEAKEASY to other languages. Further modules are being developed.

SPEAKEASY under batch provides a lower cost alternative for users who do not want to pay the connect-time charges associated with SPEAKEASY under TSO. The input is identical and most features are available. Note that the TEKTRONIX versions of GRAPHEASY are only available under TSO, while the CALCOMP and GOULD versions are only available (at present) under batch. TSO users at non-graphics terminals may write SPEAKEASY programs and prepare and manipulate data items under TSO, them KEEP them on disk under TSO, then later 'KEPT' them (restore them from disk) for plotting under batch. The 'circle' example demonstrates this. The CIRV and CIRH items were prepared under TSO , then KEPT. The batch program which produced the circle retrieved them with the KEPT operation.

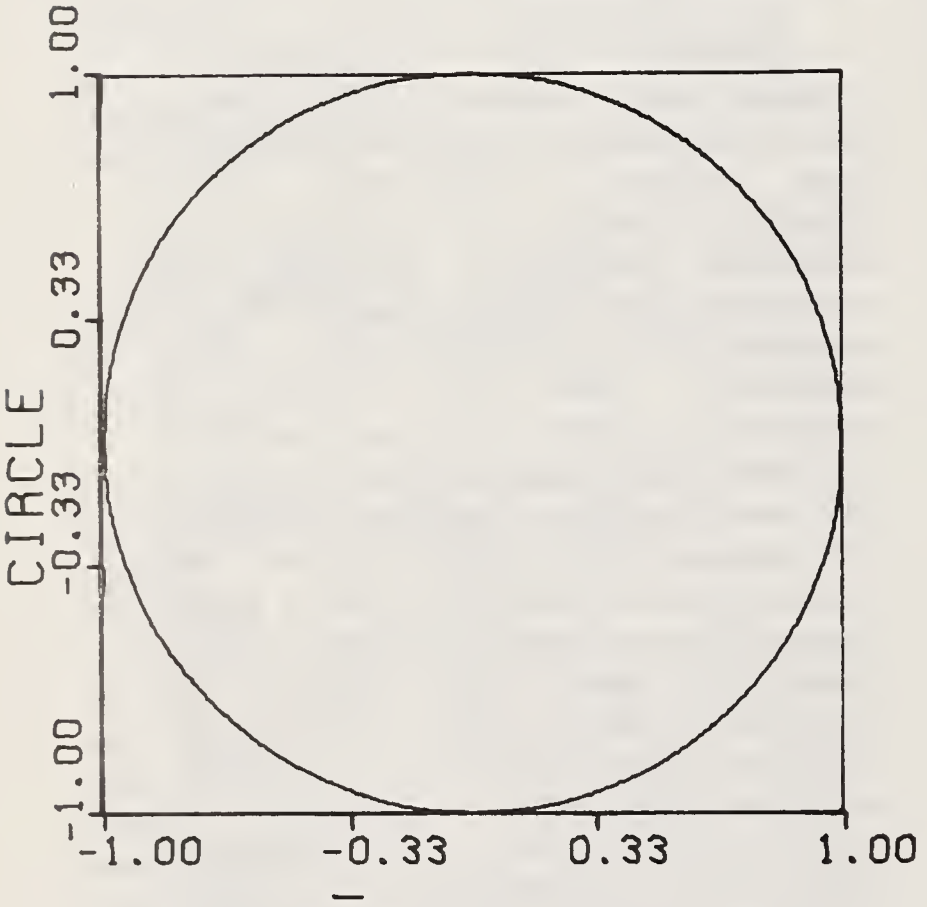
Users with problems, suggestions or queries about SPEAKEASY, should contact Ian Darwin, 49 St. George St. room 303, Toronto, Ontario M5S 1A1, 928-7318.

Ian Darwin

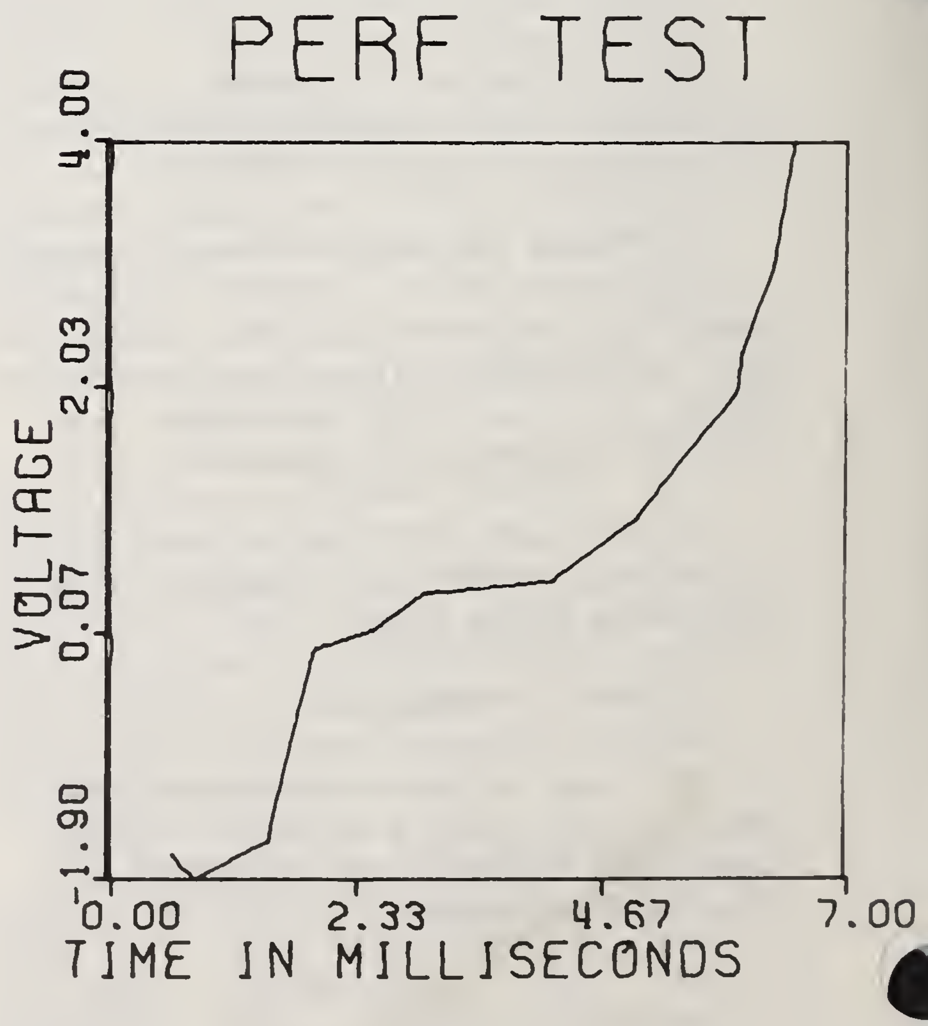
```
        SPEAKEASY 3 KAPPA 12:18 PM JULY 20, 1975
INPUT...VSIZE=3;HSIZE=3
INPUT...LOAD CALCOMP;CALCOMP
        CALCOMP INITIALIZED
INPUT...X=GRID(0 10)
INPUT...Y=SIN(X)
INPUT...Z=DERIV(Y:X)
INPUT...VSCALE=-1,1;HSCALE=0 10
INPUT...GRAPH(Y,Z:X)
```



```
HSCALE=VSCALE
CIRCLE=KEPT(CIRH);_=KEPT(CIRV);GRAPH(CIRCLE:_)
```



```
SETXLABEL('TIME IN MILLISECONDS');SETYLABEL('VOLTAGE')
SETTITLE('PERF TEST 1623-47')
TIMES=.6 .8 1.5 1.95 2.5 3 4.2 5 5.95 6 6.3 6.5
VOLTAGES=-1.7,-1.9,-1.6,-.05,.1,.4,.5,1,2,2.3,3,4
VSCALE=MIN(VOLTAGES) MAX(VOLTAGES)
HSCALE=0 7
GRAPH(VOLTAGES:TIMES)
ENDDRAW
```



RPG BUG

The RPG bug described in the May COMPUTERNEWS has been fixed. When a DD statement is missing, the user will now get the "customary" 0C1 ABEND.

In implementing the fix, 3 new catalogued procedures were added to the system. RPGUC and RPGUCLG correspond to the old RPGEC and RPGECLG. The new procedure RPGUCL is a compile and link-edit, corresponding to the first 2 steps of RPGUCLG. All symbolic parameters remain unchanged. Application of the fix to existing programs may only be made by recompiling them under the new procedures.

Please note that any fixes or UTCC-supplied enhancements will be available only through the new procedures, and that credit requests for jobs using programs compiled with the old procedures are no longer being accepted. RPGEC and RPGECLG will be removed from the system on 31 AUGUST, 1975.

Any questions concerning the above should be directed to Ran Talbott at 928-6346.

Ran Talbott

ATTENTION WATLIB USERS

UTCC is planning to update the WATFIV subroutine library called WATLIB. Some of the routines in this library were originally coded over ten years ago and have been made obsolete by more recently developed and accurate techniques. Other routines fail to perform properly or are poorly documented.

The University of Waterloo, which originally distributed WATLIB, has discontinued support for WATLIB and does not plan to issue any other releases. It has replaced some of the routines in WATLIB with similar routines in the IMSL library. (For details on the routines available in this library, see the USERBOOK module entitled 3.7IMSL).

User routines which have already been added will not be removed and users may still submit subroutines to be included in WATLIB. Decks to be included in the library should include comments in the source describing how to use the routine.

Mark Tapia

HSJS MONTHLY STATISTICS

During the month of June, 1975, 80,811 jobs were processed compared with 80,756 jobs for the previous year, an increase of .07%.

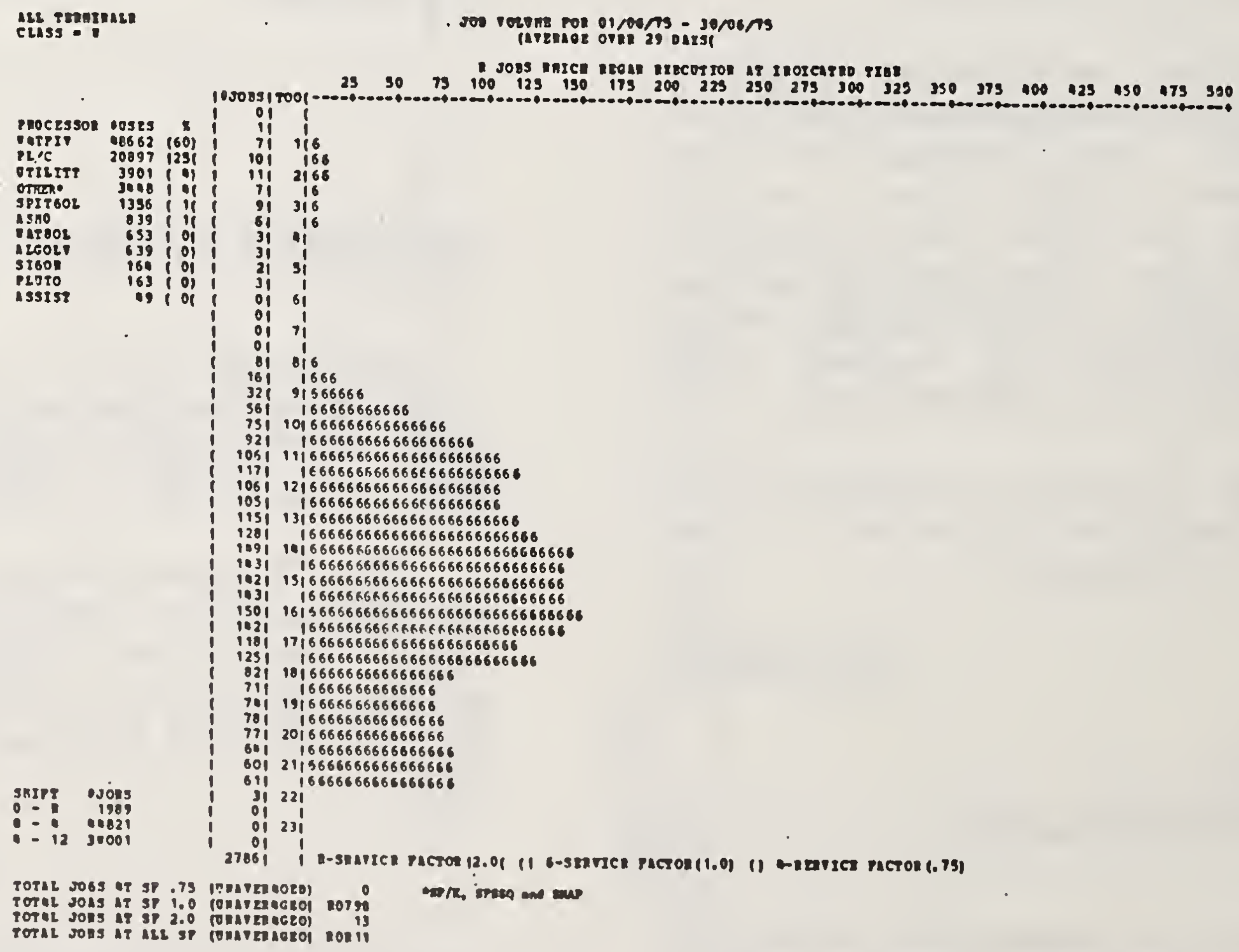
The following charts summarize the HSJS activity for the month of June. The graph represents the average number of jobs processed during each half hour period of the day.

Mark Tapia

RESOURCE USAGE BY PROCESSOR

PROCESSOR	#USES	%TOTAL	TOTAL PER PROCESSOR CPU (MIN)	TOTAL PER PROCESSOR #CARDS READ	TOTAL PER PROCESSOR #LINES PRINTED	AVERAGE PER USE CPU (MIN)	AVERAGE PER USE #CARDS READ	AVERAGE PER USE #LINES PRINTED
WATFIV	48662	(60)	602.51	8401640	9301418	0.012	172	188
PL/C	20897	(26)	201.19	1705710	3303234	0.008	80	156
UTILITY	3901	(5)	11.97	611441	767744	0.000	156	196
OTHER*	3448	(4)	45.55	319777	548717	0.012	92	156
SPITBOL	1356	(2)	13.44	260165	271752	0.008	188	200
ASMG	839	(1)	13.33	111621	195957	0.016	132	232
WATBOL	653	(1)	5.53	89074	113379	0.008	136	172
ALGOLW	639	(1)	21.57	165833	161336	0.031	256	252
SIMON	164	(0)	0.63	5903	11595	0.000	32	68
PLUTO	163	(0)	2.54	20296	26738	0.012	124	164
ASSIST	49	(0)	0.36	9640	14641	0.004	196	296
LISP	40	(0)	0.60	5705	5738	0.012	140	140
TOTAL	80811		919.22	11706805	14722249	0.011	144	182

*SP/K, SPSSQ and SNAP



```
ALL TERMINALS                                JOB VOLUME FOR 01/06/75 - 30/06/75
CLASS = W                                         (AVERAGE OVER 29 DAYS)

                                          # JOBS WHICH BEGAN EXECUTION AT INDICATED TIME
                                  25   50   75  100  125  150  175  200  225  250  275  300  325  350  375  400  425  450  475  500
                     |#JOBS|TOO(----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+
                     |    0|   |
PROCESSOR #USES  %   |    1|   |
WATFIV    48662 (60) |    7|  1|6
PL/C      20897 (25) |   10|   |66
UTILITY    3901 ( 4) |   11|  2|66
OTHER*     3448 ( 4) |    7|   |6
SPITBOL    1356 ( 1) |    9|  3|6
ASMG        839 ( 1) |    6|   |6
WATBOL      653 ( 0) |    3|  4|
ALGOLW      639 ( 0) |    3|   |
SIMON       164 ( 0) |    2|  5|
PLUTO       163 ( 0) |    3|   |
ASSIST       49 ( 0) |    0|  6|
                     |    0|   |
                     |    0|  7|
                     |    0|   |
                     |    8|  8|6
                     |   16|   |666
                     |   32|  9|
                     |   56|   |
                     |   75| 10|
                     |   92|   |
                     |  105| 11|
                     |  117|   |
                     |  106| 12|
                     |  105|   |
                     |  115| 13|
                     |  128|   |
                     |  149| 14|
                     |  143|   |
                     |  142| 15|
                     |  143|   |
                     |  150| 16|
                     |  142|   |
                     |  118| 17|
                     |  125|   |
                     |   82| 18|
                     |   71|   |
                     |   74| 19|
                     |   78|   |
                     |   77| 20|
                     |   64|   |
                     |   60| 21|
                     |   61|   |
SHIFT   #JOBS        |    3| 22|
0 - 8    1989        |    0|   |
8 - 4   44821        |    0| 23|
4 - 12  34001        |    0|   |
                      2786|   | H-SERVICE FACTOR(2.0) () 6-SERVICE FACTOR(1.0) () 4-SERVICE FACTOR(.75)

TOTAL JOBS AT SF .75 (UNAVERAGED)      0      *SP/K, SPSSQ and SNAP
TOTAL JOBS AT SF 1.0 (UNAVERAGED)  80798
TOTAL JOBS AT SF 2.0 (UNAVERAGED)     13
TOTAL JOBS AT ALL SF (UNAVERAGED)  80811
```

S/370-165-II RELIABILITY

The reliability statistics for June indicate an uptime percentage of 97.4 while the average number of IPL's per day reached 0.79. The number of scheduled hours of production for June totalled 447.

MONTHLY COMPARATIVE FIGURES

MONTH	% UPTIME	UNSCHED. IPLs/DAY
Jan/74	97.0	1.37
Feb/74	98.3	1.25
Mar/74	98.7	1.06
Apr/74	99.3	0.52
May/74	99.2	0.87
Jun/74	96.1	0.75
Jul/74	91.7	1.66
Aug/74	98.3	0.86
Sep/74	94.5	1.83
Oct/74	98.6	1.07
Nov/74	98.9	0.93
Dec/74	97.1	1.21
Jan/75	95.7	2.77
Feb/75	96.0	1.14
Mar/75	96.7	1.10
Apr/75	98.6	0.70
May/75	99.4	0.60
Jun/75	97.4	0.79

The percentage breakdown of total system downtime for June was:

Hardware: 566 minutes (81.8%)
Software: 61 minutes (8.8%)
Other : 65 minutes (9.4%)

The major events contributing to these downtime totals were as follows:

June 9: 37 minutes down - 6 IPLs

a. 5 minutes attributed to a HASP catastrophic error.

b. 32 minutes charged to DOUBLE BIT errors in ITEL memory. A bad card was replaced.

June 10: 72 minutes down - 2 IPLs

a. 67 minutes due to channel detected errors on the ITEL controller attached to channel 3. A number of cards were re-seated which rectified the problem.

b. 5 minutes were lost when the O.I.S.E. terminal failed to come online. An IPL was scheduled but did not solve the problem.

June 17: 47 minutes down - 1 IPL

a. All downtime and IPLs attributed to numerous channel 3 detected errors which required ITEL corrective maintenance. A bad card was replaced.

June 18: 294 minutes down - 5 IPLs

a. All downtime and IPLs charged to numerous ICC and EQUIP. checks on the ITEL 7830 control unit attached to channel 3. ITEL were performing corrective maintenance throughout the day and no solution was found.

June 19: 101 minutes down - 5 IPLs

a. 83 minutes attributed to continuing problems with the 7830 ITEL controller. Channel 3 and 4 were physically interchanged and the problem was rectified.

b. 18 minutes were due to HOSINIT abends and the HOSRDR continually closing. An IPL solved the problem.

cont'd...

S/370-165-II RELIABILITY Cont'd.

June 20: 30 minutes down - 2 IPLs

a. 5 minutes were charged to an air leak in the 2301 drum. An IPL was scheduled to take it offline.

b. 25 minutes were attributed to a supervisor loop while OLTEP was performing diagnostics on the drum.

June 23: 49 minutes down - 0 IPLs

a. All downtime due to extended testing while benchmarks were being run on the S/370/165-II.

Paul Scarborough

```
                         DOWNTIME_REPORT_ON___S/370__FOR_JUN_75


------------------------------------------------------------------------------------------------------------------------------
|                                                  REIPLS(FREQ) // DOWNTIME (MN)                                             |
| DAY  REIPL     DNTIME 0    5   10   15   20   25   30   35   40   45   50   55   60   65   70   75   80   85   90   95  100|
========================+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+|
| S  1      0      0    |                                                                                                    |
| M  2      0      0    |                                                                                                    |
| T  3      2     15    |□□*************                                                                                     |
| W  4      0      0    |                                                                                                    |
| T  5      0      0    |                                                                                                    |
| F  6      0     18    |******************                                                                                  |
| S  7      0      0    |                                                                                                    |
| S  8      0      0    |                                                                                                    |
| M  9      6     37    |□□□□□□*******************************                                                               |
| T 10      2     72    |□□**********************************************************************                            |
| W 11      1      8    |□*******                                                                                            |
| T 12      1      5    |□****                                                                                               |
| F 13      0      0    |                                                                                                    |
| S 14      0      0    |                                                                                                    |
| S 15      0      0    |                                                                                                    |
| M 16      0      0    |                                                                                                    |
| T 17      1     47    |□**********************************************                                                     |
| W 18      5    294    |□□□□□****************************************************************************************** 294 |
| T 19      3    101    |□□□******************************************************************************************** 101 |
| F 20      2     30    |□□****************************                                                                      |
| S 21      0      0    |                                                                                                    |
| S 22      0      0    |                                                                                                    |
| M 23      0     49    |*************************************************                                                   |
| T 24      0      6    |******                                                                                              |
| W 25      0      5    |*****                                                                                               |
| T 26      0      0    |                                                                                                    |
| F 27      0      5    |*****                                                                                               |
| S 28      0      0    |                                                                                                    |
| S 29      0      0    |                                                                                                    |
| M 30 (CENTER CLOSED)  |                                                                                                    |
------------------------------------------------------------------------------------------------------------------------------


  LEGEND     : ONE □  =ONE REIPL
               ONE *  =ONE MINUTE OF DOWNTIME
```

```
                           _S/370__DOWNTIMES_DURING_JUN_75


---------------------------------------------------------------------------------------------------------------------------
|                                                  TIME OF DAY (HOURS)                                                    |
| DAY    RELOADS DNTIME  0   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24|
=========================+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+|
| S  1      0      0     |                                                                                                |
| M  2      0      0     |                                                                                                |
| T  3      2     15     |                                                      H            H                            |
| W  4      0      0     |                                                                                                |
| T  5      0      0     |                                                                                                |
| F  6      0     18     |                                HH                                                              |
| S  7      0      0     |                                                                                                |
| S  8      0      0     |                                                                                                |
| M  9      6     37     |                                                              S     H    H H     H    H         |
| T 10      2     72     |             HHHHHH                       H                                                     |
| W 11      1      8     |                                                     S                                          |
| T 12      1      5     |                                         S                                                      |
| F 13      0      0     |                                                                                                |
| S 14      0      0     |                                                                                                |
| S 15      0      0     |                                                                                                |
| M 16      0      0     |                                                                                                |
| T 17      1     47     |                                HHH                                                             |
| W 18      5    294     |                                    H  HHHHHHHHHHHHHHHH H HHHH                                  |
| T 19      3    101     |                     H           HHHHHH      SS                                                 |
| F 20      2     30     |                                                  H                       SS                    |
| S 21      0      0     |                                                                                                |
| S 22      0      0     |                                                                                                |
| M 23      0     49     |    IIII                                                                                        |
| T 24      0      6     |     I                                                                                          |
| W 25      0      5     |     I                                                                                          |
| T 26      0      0     |                                                                                                |
| F 27      0      5     |      I                                                                                         |
| S 28      0      0     |                                                                                                |
| S 29      0      0     |                                                                                                |
| M 30  (CENTER CLOSED)  |                                                                                                |
---------------------------------------------------------------------------------------------------------------------------
LEGEND :    H FOR HARDWARE
            S FOR SOFTWARE                      STATISTICS
            O FOR OPERATIONAL
            U FOR UNEXPLAINED
            I FOR LATE IPL
                                            TOTAL SCHEDULED HOURS OF PRODUCTION :   447
                                            TOTAL DOWNTIME (MN)   :   692 , AVG/DAY :   23.86 , AVG/PROD HOUR :    0.75
                                            TOTAL REIPL'S         :    23 , AVG/DAY :    0.79
                                            DOWNTIME RATE IS      :  2.58 PERCENT OF SCHEDULED PRODUCTION HOURS
```

INTERACTIVE SYSTEMS RELIABILITY

The uptimes achieved for the month of June for each of APL and ATS were 99.66% and 99.67% of scheduled operation, respectively. The scheduled hours of operation during the month of June totalled 482, while the number of unscheduled IPL's per day was 0.10. In addition to the scheduled time, Interactive services were also available for approximately 105 hours of unattended weekend operation.

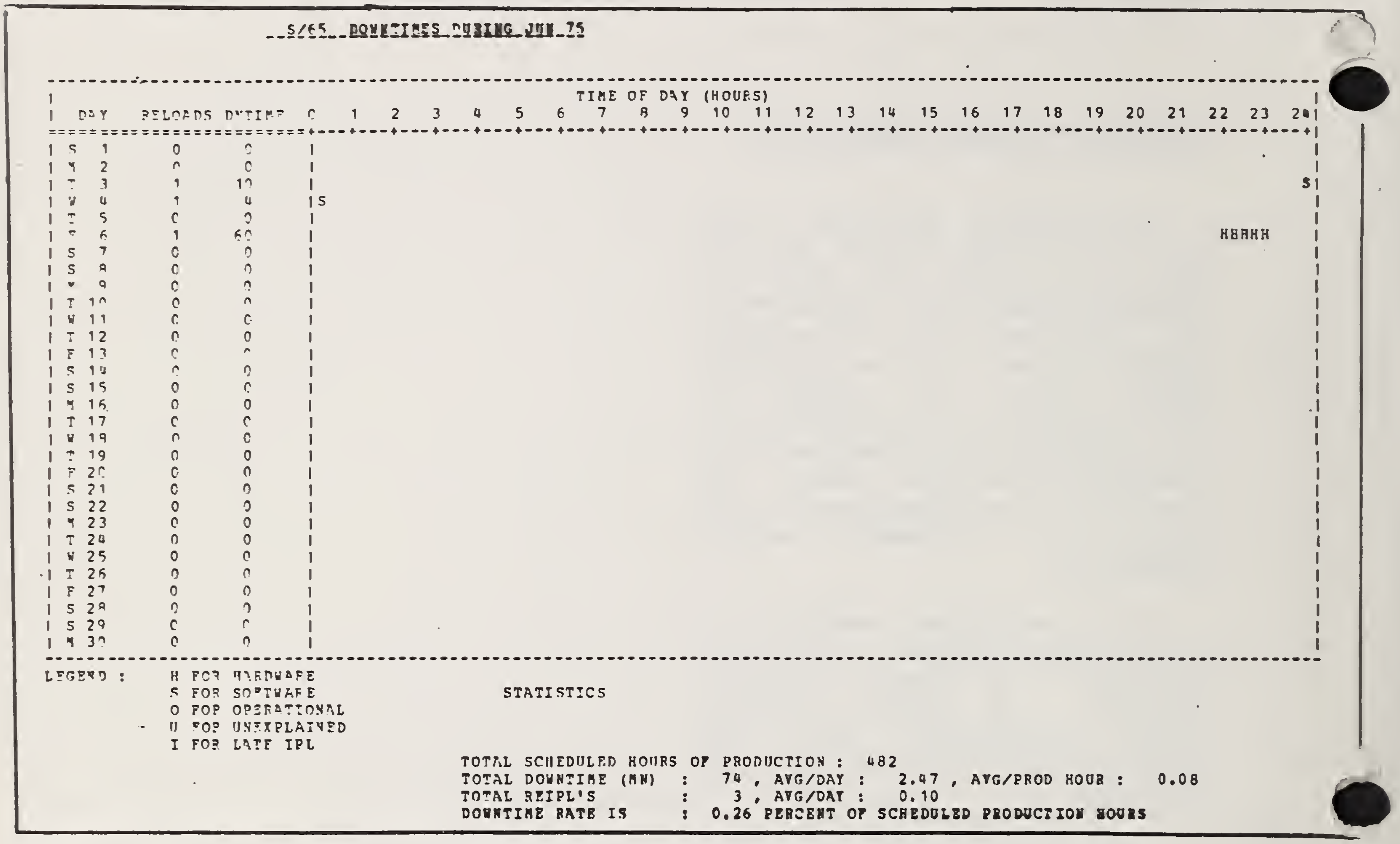
The percentage breakdown of total system downtime for June was: Hardware - 60 minutes (81.08%); Software - 14 minutes (18.92%). Three unscheduled IPL's were required as a result of the failures.

The following table summarizes the time lost out of scheduled hours of production due to system failures for each of the systems:

Kam Jain

DATE	DOWNTIME (mins)		REASON
	APL	ATS	
Mon. Jun 2	-	10	ATS late due to Rollin
Tue. Jun 3	10	10	*Hasp catastrophic error (SOFTWARE)
Wed. Jun 4	6	9	*Hasp catastrophic error (SOFTWARE)
Fri. Jun 6	62	65	*Solid systems (HARDWARE)
Sat. Jun 14	20	-	Switch from test to prod. version of APL (SOFTWARE)
Total	98	94	*IPL Required

System Failures June 1 to June 30, 1975



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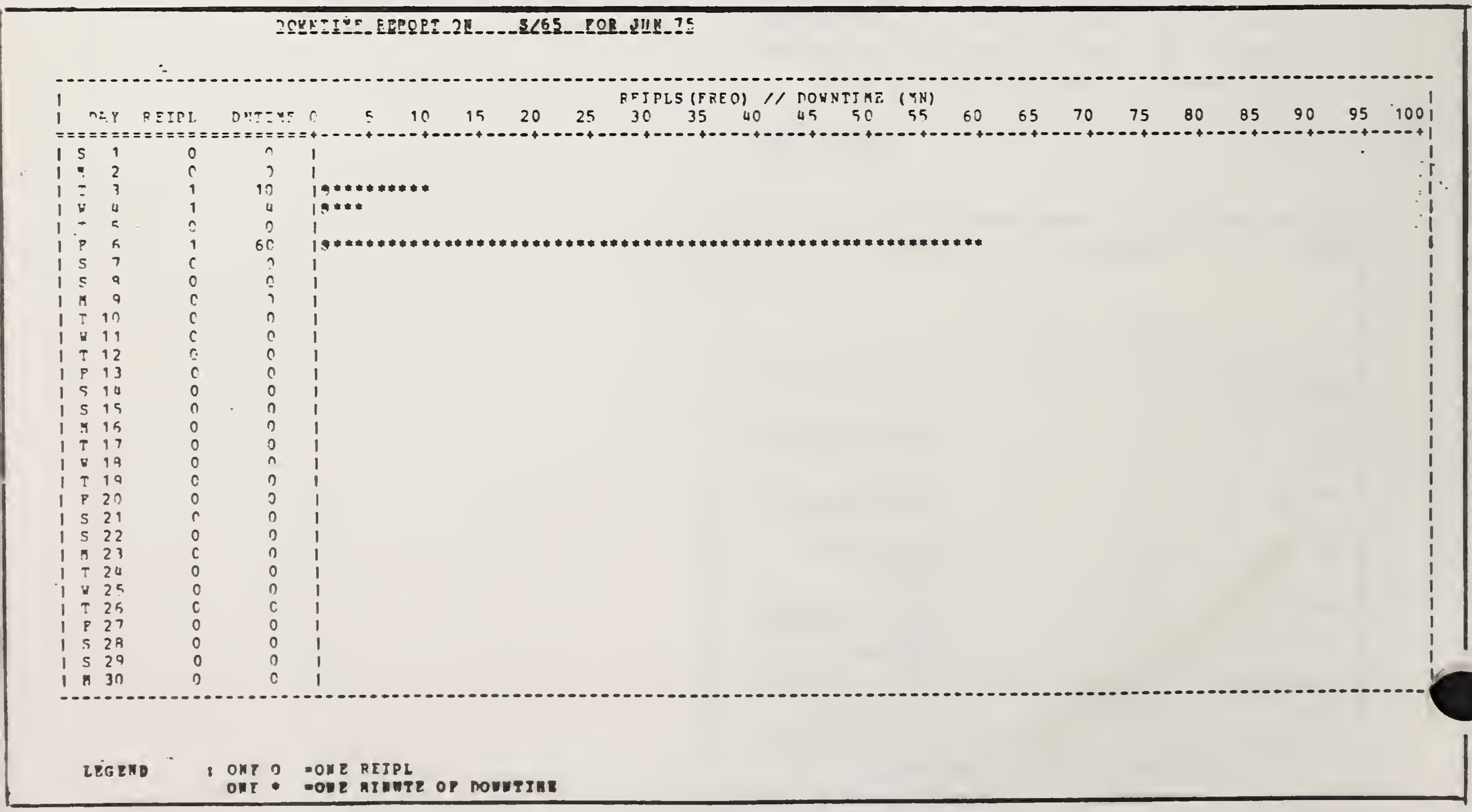
                            __S/65__DOWNTIMES_DURING_JUN_75

-------------------------------------------------------------------------------------------------------------------------
|                                                  TIME OF DAY (HOURS)                                                  |
|  DAY   RELOADS DWTIME 0   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24|
========================+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
| S  1      0       0   |                                                                                               |
| M  2      0       0   |                                                                                               |
| T  3      1      10   |                                                                                              S|
| W  4      1       4   |S                                                                                              |
| T  5      0       0   |                                                                                               |
| F  6      1      60   |                                                                                       HHHHH   |
| S  7      0       0   |                                                                                               |
| S  8      0       0   |                                                                                               |
| M  9      0       0   |                                                                                               |
| T 10      0       0   |                                                                                               |
| W 11      0       0   |                                                                                               |
| T 12      0       0   |                                                                                               |
| F 13      0       0   |                                                                                               |
| S 14      0       0   |                                                                                               |
| S 15      0       0   |                                                                                               |
| M 16      0       0   |                                                                                               |
| T 17      0       0   |                                                                                               |
| W 18      0       0   |                                                                                               |
| T 19      0       0   |                                                                                               |
| F 20      0       0   |                                                                                               |
| S 21      0       0   |                                                                                               |
| S 22      0       0   |                                                                                               |
| M 23      0       0   |                                                                                               |
| T 24      0       0   |                                                                                               |
| W 25      0       0   |                                                                                               |
| T 26      0       0   |                                                                                               |
| F 27      0       0   |                                                                                               |
| S 28      0       0   |                                                                                               |
| S 29      0       0   |                                                                                               |
| M 30      0       0   |                                                                                               |
-------------------------------------------------------------------------------------------------------------------------
LEGEND :      H FOR HARDWARE
              S FOR SOFTWARE                    STATISTICS
              O FOR OPERATIONAL
              U FOR UNEXPLAINED
              I FOR LATE IPL
                                        TOTAL SCHEDULED HOURS OF PRODUCTION :  482
                                        TOTAL DOWNTIME (MN)   :   74 , AVG/DAY :    2.47 , AVG/PROD HOUR :    0.08
                                        TOTAL REIPL'S         :    3 , AVG/DAY :    0.10
                                        DOWNTIME RATE IS      :  0.26 PERCENT OF SCHEDULED PRODUCTION HOURS
```



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                         DOWNTIME_REPORT_ON____S/65__FOR_JUN_75


----------------------------------------------------------------------------------------------------------------------------
|                                                  REIPLS(FREQ) // DOWNTIME (MN)                                           |
|  DAY  REIPL   DWTIME 0    5   10   15   20   25   30   35   40   45   50   55   60   65   70   75   80   85   90   95  100|
=======================+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+
| S  1      0       0  |                                                                                                   |
| M  2      0       0  |                                                                                                   |
| T  3      1      10  |0**********                                                                                        |
| W  4      1       4  |0****                                                                                              |
| T  5      0       0  |                                                                                                   |
| F  6      1      60  |0************************************************************                                      |
| S  7      0       0  |                                                                                                   |
| S  8      0       0  |                                                                                                   |
| M  9      0       0  |                                                                                                   |
| T 10      0       0  |                                                                                                   |
| W 11      0       0  |                                                                                                   |
| T 12      0       0  |                                                                                                   |
| F 13      0       0  |                                                                                                   |
| S 14      0       0  |                                                                                                   |
| S 15      0       0  |                                                                                                   |
| M 16      0       0  |                                                                                                   |
| T 17      0       0  |                                                                                                   |
| W 18      0       0  |                                                                                                   |
| T 19      0       0  |                                                                                                   |
| F 20      0       0  |                                                                                                   |
| S 21      0       0  |                                                                                                   |
| S 22      0       0  |                                                                                                   |
| M 23      0       0  |                                                                                                   |
| T 24      0       0  |                                                                                                   |
| W 25      0       0  |                                                                                                   |
| T 26      0       0  |                                                                                                   |
| F 27      0       0  |                                                                                                   |
| S 28      0       0  |                                                                                                   |
| S 29      0       0  |                                                                                                   |
| M 30      0       0  |                                                                                                   |
----------------------------------------------------------------------------------------------------------------------------


  LEGEND      : ONE 0  =ONE REIPL
                ONE *  =ONE MINUTE OF DOWNTIME
```

DATATALK SOLVES PROBLEMS

Perhaps there is no more effective way to solve problems than to ask someone who knows how.

Sometimes, too, calculations are simply too extensive to do accurately by hand.

DATATALK is available everyday and continues to gather experience in solving problems that just about anyone at the University of Toronto may incur at one time or another.

Please call us if all you really need are answers. Dial 928-6710, 10 a.m. - 10 p.m. any weekday.

PROBLEM:

Find constants A,B,C in order to describe a temperature distribution as TEMP = A x (T*B) x EXP(-CxT), given times, T, and temperatures, TEMP.

DATATALK: Good morning, DATATALK services.

D: Hello. Good morning. Could you use some technique or another to fit an equation of the type TEMP=AxT to the power B x EXP(-CxT)?

D: Oh yes...

C: Ah, well, ahm, do you just give advice or do you actually go ahead and do it?

D: I can do it now if there aren't too many temperature readings to read in over the telephone.

C: O.K. There aren't many. Ten or so. Temperature is 0.0, 0.25, 1.07, 2.16, 2.85, 2.85, 2.44, 1.72, 1.10, 0.63, 0.32 and 0.16. Also, the times are 0.0 to 13.75 in steps of approximately 1.25 minutes.

D: Now, if I transform the equation...and then transform back... I get A=0.2316, B=4.0126 and C=0.7796. The standard deviation is...

C: Wait, please. What do you mean if you transform the equation and then transform back?

D: Ah....well, I used a linear least squares method, but in order to do that I had to take logarithms of both sides of that equation, that is, fit LOG TEMP=LOG(A)+(BxLOG T)-CxT... Also, of course, I had to drop your zero readings before I could take logarithms...

C: Oh no! It has to go through zero!

D: Ahm...Well it does anyway because of the form of the equation.

C: Ah, yes. That's right. Fine, thank you. What are those constants again, please...

PROBLEM:

My table of DB versus HZ is not extensive enough. I measured in steps of 40 HZ, but what I really need is steps of 2 HZ.

DATATALK: Good morning, DATATALK services.
C: Hello. One of my colleagues pointed out that you might
be able to help me. I don't use the computer very often...
and anyway, I'm not sure what method I could use.
D: Yes...
C: Well, I have a table of DB measurements versus frequency
measurements in steps of 40 HZ. That's not nearly good
enough. What I need is steps of about 2 HZ.
D: I could interpolate. Actually, I could fit a curve...
and then calculate the between values...
C: If you fit a curve, can you guarantee that it will pass
through the measured points?
D: Yes and no. Suppose I interpolate... I'll do it by cubic
splines...and then we'll see if that's adequate.
C: Right then. Now, the DB measurements are...

PROBLEM:

Tabulate Score=(1+2x(N-1))x(NxR)+(Qx(N-1))-(QxQ)+R) for N=4.5 and also for Q=15,20 and R=1,2,3,...,Q.

DATATALK: Good morning, DATATALK services.
C: Hello. This is a trivial problem. You won't find it
interesting, but it would save me several hours work with
a calculator if you could do it by computer.
D: Oh, good. Maybe we can help then.
C: I have a table of scores that are calculated by the formula,
Score = (1+2x(N-1))x(NxR)+(Qx(N-1))-(QxQ)+R).
Now, N=4 and 5 and Q=15 and 20 and I let R run from 1 up to
Q for each N and Q. Can you? There are 70 calculations here.
D: Right. I can do this in one blow...I notice that the first
few values in each table are negative...Is that correct?
C: Yes. I expect that. That's fine. The last value for each
N and Q should be Q though...

UTCC COMPUTER EQUIPMENT

SYSTEM/370 MODEL 165-II

- located in SF103/105/112
- provides General Purpose Job Stream, High Speed Job Stream and TSO services
- 3072K bytes of memory
- 1 drum
- 13 disk drives (3330)
- 8 disk drives (2314)
- 6 magnetic tape drives (4 9-track and 2 7-track)
- 6 display consoles
- 6 printers
- 5 card readers
- 1 card punch
- 8 remote batch terminals
- 1 paper tape reader
- Calcomp plotters (11" and 30")
- Gould plotter (11")
- OS/MVT with HASP

SYSTEM/360 MODEL 65

- located in McLennan Physical Laboratories
- provides Interactive Systems Service
- 1536K bytes of core
- 24 disk drives (2314)
- 3 9-track magnetic tape drives
- 1 printer
- 1 card reader
- 1 card punch
- 140 typewriter terminals
- OS/MVT with APL, ATS and CPS

7094 II

- located in Room 1203 Burton Tower
- 32K words of core
- 1 disk
- 8 magnetic tape drives
- input/output via a 1401 computer

COMPUTER RESEARCH FACILITY

- located in SF207
- DEC GT44 Systems with
  - 1 PDP-11/40 CPU
  - 2 9-track dual density tape drives
  - 1 1000 cpm card reader
  - VT17 graphics display unit
  - 1 lab. peripheral system with A/D & D/A
  - 1 CVI 260 Video Bandwidth Compressor
- DEC GT40 System with
  - 1 PDP-11/10 CPU
  - 1 2314 tape disk drive
  - 1 VT12 graphic display unit
  - 9-track/800 BPI tape drive
  - 1 Calcomp microfilm plotter

UTCC DIRECTORY

	ROOM	PHONE 928-
DIRECTOR		
John C. Wilson	SF143	6496
ASSOCIATE DIRECTOR		
Al Heyworth	SF116	4936
ADMINISTRATION MANAGER		
Anthony Pieterse	SF137	8948
INFORMATION OFFICE		
General Inquiries	SF128	4990 or 4991
Don Gibson	SF128A	
MANAGER, SERVICES		
Stan Yagi	SG200	7331
SUPERVISOR, MARKETING SERVICES		
Dave Scobie	SG201	6877
TERMINAL CO-ORDINATORS		
Sandford Fleming Terminal		
Mark Tapia	SF125	7109
Program Advisors	SF117	8599
Erindale		
Vaughan Lawrason		828-5311
Scarborough		
Ralph Lombardi		284-3173
Arts and Science		
Marlene Domoney	SS2104	6509
Management Studies		
Paul Roth		4917
MANAGER, APPLICATIONS SUPPORT		
Joyce Walton	SG204	6875
MANAGER, OPERATIONS		
Derry Cox	SF113	7092
MANAGER, SYSTEMS		
Rein Mikkor	SF113	5058
SYSTEM HARDWARE SUPERVISOR		
Eugene Siciunas	SF113	4967
SUPERVISOR, 7094 SERVICES		
William Beasley	NP1207	7094
MANAGER, COMPUTER RESEARCH FACILITY		
Dennis Smith	SF214B	4800
LAB CO-ORDINATOR (CRF)		
Krishna Patnaik	SF207	8858
CONTRACT PROGRAMMING		
Dave Scobie	SG201	6877
AUTHORIZATION CLERK		
Yvonne Bowen	SF139	8703
ASSISTANT MANAGER, INFORMATION SYSTEMS TERMINAL		
George Milo		5040

NOTE:

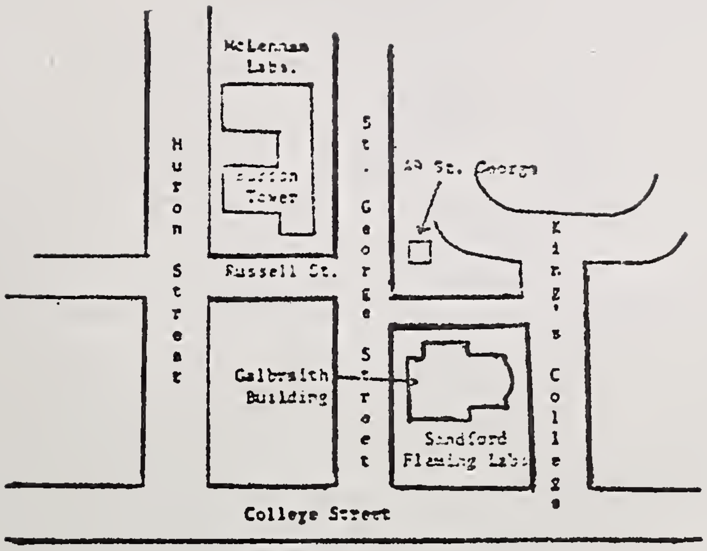
SF = Sandford Fleming
SG = 49 St. George
NP = McLennan Physical (New Physics)
SS = Sydney Smith

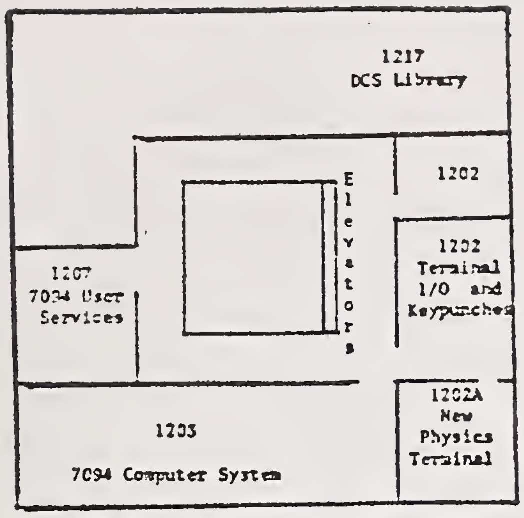
JOB AND SYSTEM STATUS QUERIES

SYSTEM/370, TSO	7373
ATS/APL	6234
7094	7094
2741 TERMINAL MALFUNCTIONS	7107
029 KEYPUNCH MALFUNCTIONS	6465

SERVICES

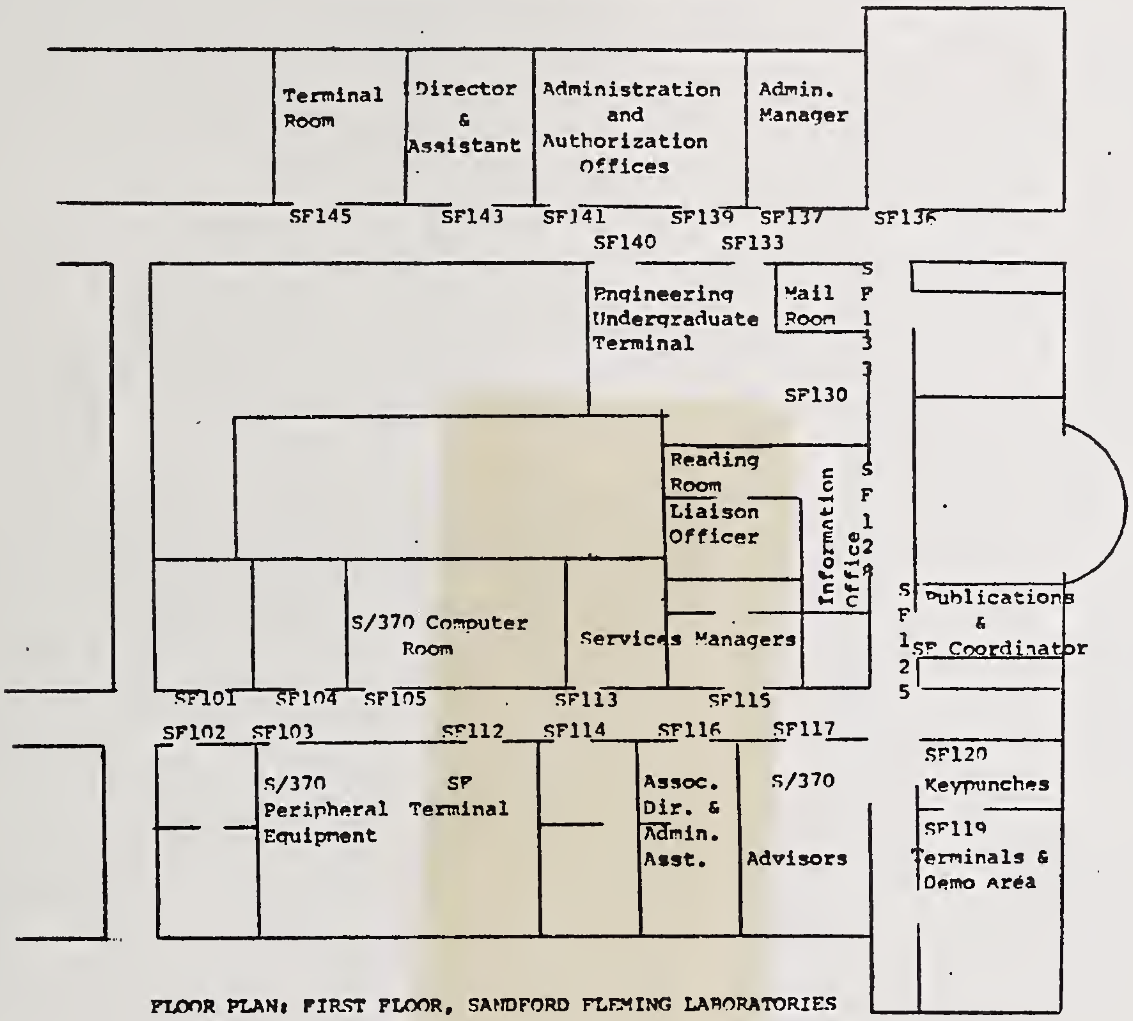
	DIAL-UP	ADVICE
APL	7200	6710
ATS	7100	7107
TSO - 2741	7303	8599
TSO - TTY (10 cps)	7390	8599
TSO - TTY (30 cps)	7386	8599
DATATALK	6710	6710



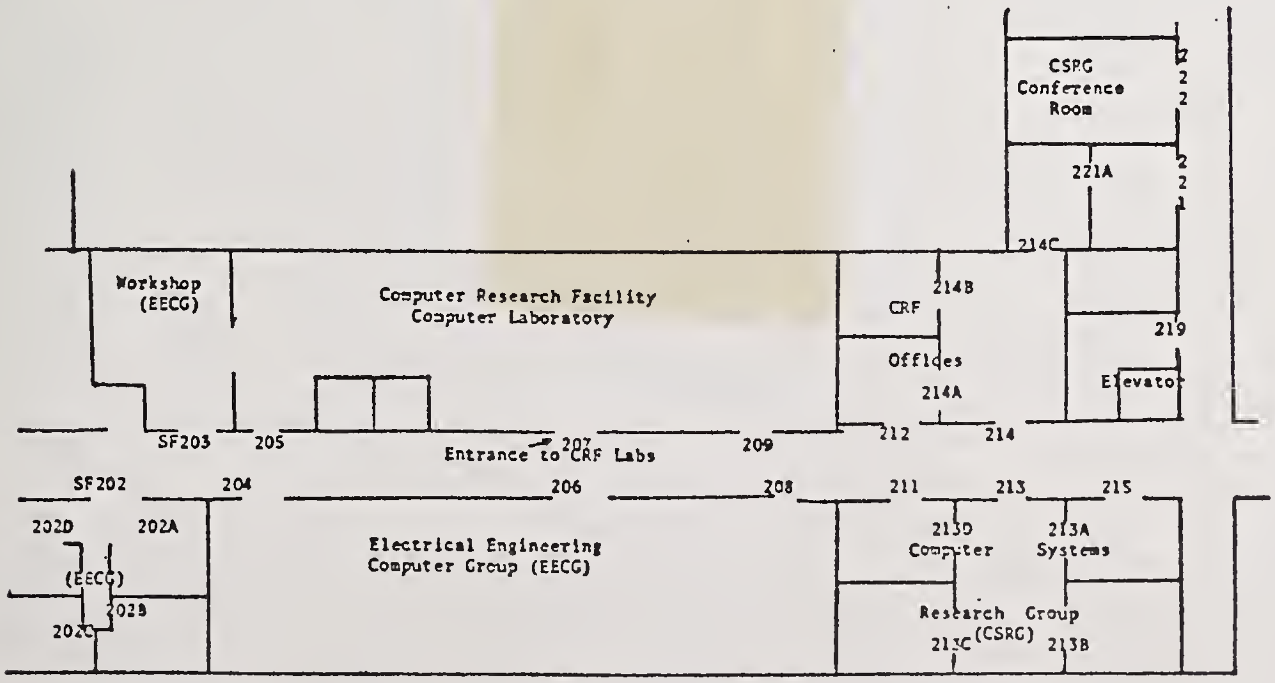


FLOOR PLAN: TWELFTH FLOOR, BURTON TOWER

UNIVERSITY OF TORONTO COMPUTER CENTRE



FLOOR PLAN: FIRST FLOOR, SANDFORD FLEMING LABORATORIES



FLOOR PLAN: SECOND FLOOR, SANDFORD FLEMING LABORATORIES

UNIVERSITY OF TORONTO
COMPUTER CENTRE,
TORONTO, CANADA.

CAMPUS DELIVERY

DR.J.C.WILSON
DIRECTOR
U T C C
SANDFORD FLEMING BLDG.
ROOM 143
UNIVERSITY OF TORONTO